Paper for Consideration by TSM3

Status of S-100 Feature Catalogue Builder

Submitted by:	Republic of Korea (KHOA)
Executive Summary:	This paper outlines the status of S-100 Feature Catalogue Builder(FCB)
Related Documents:	S-100, S-100 Test Framework
Related Projects:	IHO S-100/S-101 Test Bed Project

Introduction / Background

ROK was tasked for the development of S-100 Feature Catalogue Builder (FCB) in the IHO S-100/S-101 Test Bed Project. The S-100 FCB was drafted in the mid of 2014 and the S-101 feature catalogue was produced to be used in the S-101 Converter and S-100 Portrayal catalogue builder. The development progress of the S-100 FCB was reported at the last TSM and TSMAD meetings. This paper reports its progress since the last TSMAD meeting. The S-100 FCB software is being validated and improved by connecting to the KHOA Registry.

Analysis/Discussion

Establishment of the validation environment for the S-100 FCB

The S-100 FCB is a stand-alone S/W which an S-10X developer uses it by installing it on a computer. After being connected to the FCD Register of the S-100 Registry, it creates the Feature Catalogue required from the S-10X PS, and then saves the result as Feature Catalogue DB or in an XML format.

ROK installed the FCD Register DB as Local DB on the same PC, completed validating the S-100 FCB (2013~2015), and set up an environment which connects the FCD Register DB, which is installed in the physically separated S-100 Registry server, with the S-100 FCB and validates relevant function as shown in Fig 1.

In order to minimize the problems which occur while transferring the S-100 FCB to the IHO, ROK believed it was appropriate to establish the same environment with the IHO S-100 Registry which the S-100 FCB will get to access. Accordingly, ROK received the current FCD Register DB which was saved in the IHO S-100 Registry as dump file from the S-100 WG Chair, transferred it to the KHOA Registry, and then set up an environment which it can be accessed from the KHOA Registry in order to validate various functions.

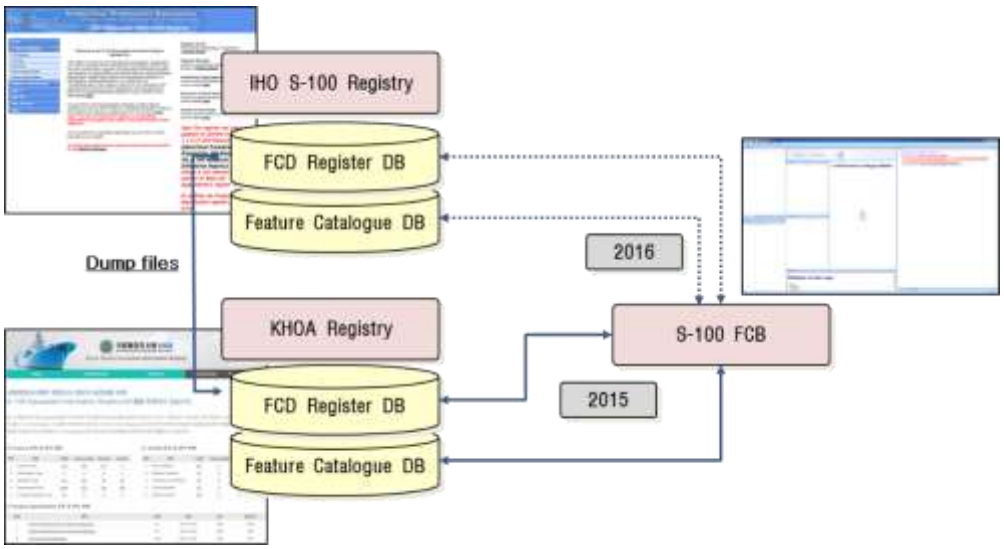

Fig 1. Establishment of the validation environment for the S-100 FCB

ROK connected the S-100 FCB with the KHOA Registry which FCD Register DB of the IHO S-100 Registry was transferred to, and is planning to test creating the Feature Catalogue. Once the IHO S-100 Registry is settled and

the access to the S-100 FCB ready, ROK plans to operate the S-100 FCB by directly accessing it from the IHO S-100 Registry.

Major updates of the S-100 FCB and its progress

ROK validated the function to create the Feature Catalogue by accessing the S-100 FCB from the KHOA Registry, and while doing so, a few improvements were identified and conducted as below:

- **User login**: The S-100 FCB uses the DB from the S-100 Registry and is used by an S-10X developer, so a limited access was needed. Since the IHO S-100 Registry already manages the user information in tables, ROK added an S-100 FCB user login using the tables.

- **Management of the Feature Catalogue**: The results from the S-100 FCB can be saved either in an XML file or as Feature Catalogue DB. ROK stabilized the function to save/load the results from S-100 FCB in an XML file or as FC DB.

- **Evaluation of the access time to the Registry of the S-100 FCB**: The S-100 FCB either loads the contents of the FCD Register DB (Simple Attribute, Complex Attribute, Listed Values, Information Types, Feature Types) or loads/saves the contents from the Feature Catalogue DB, of when a considerable amount of access time is taken. ROK evaluated the time taken to access the server in different situations, and identified the differing access time depending on the network user environment.

- **Function to prevent human errors**: ROK is in the process of improving the function to prevent human errors from the viewpoint of S-100 FCB users. For example, ROK is investigating the essential requirements in accordance with the Feature Catalogue XML Schema, or is improving the function to recognize when results are not saved by mistake.

- **Application of changes to the Feature Catalogue Schema**: It was decided at the last TSMAD meeting to check the UML data model included in S-100, as well as the Feature Catalogue. The S-100 WG Chair invited Jeppesen to change the Feature Catalogue Schema according to the changed data model of S-100, and if the Feature Catalogue Schema is changed, ROK plans to reflect it in the S-100 FCB.

- **Validation of the S-100 FCB in non-hydrographic fields:** In order to validate the S-100 FCB in non-hydrographic fields, ROK provided the S-100 FCB to the inland domain and plans to evaluate and reflect the requirements.

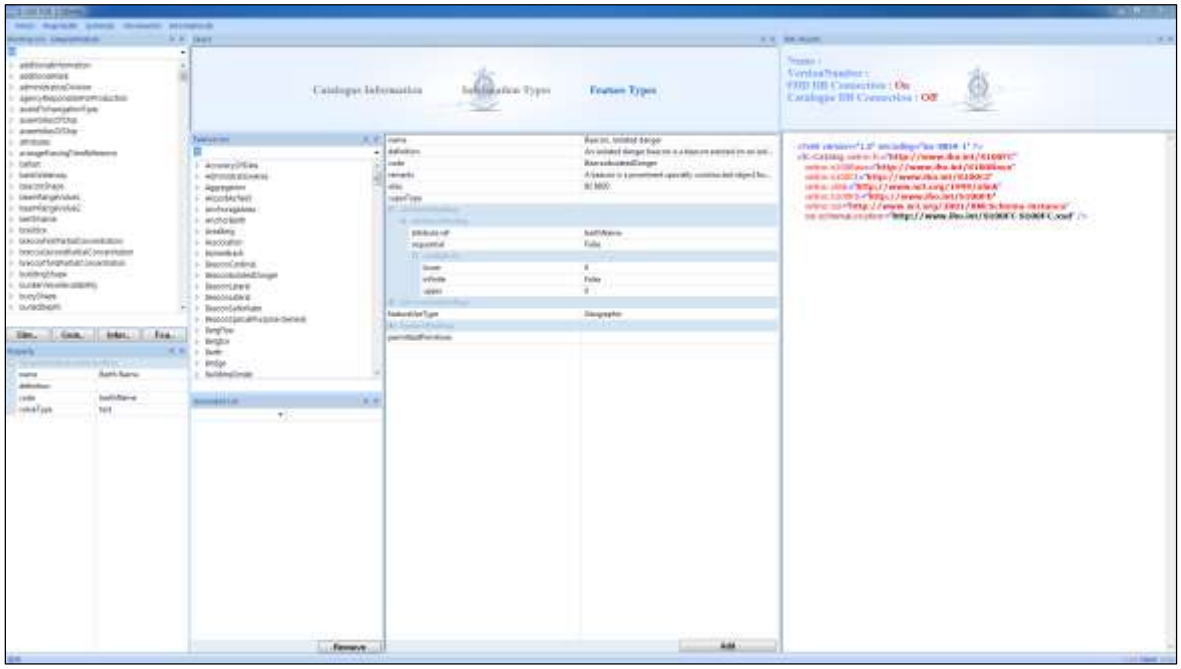

Fig 2. ROK is improving the S-100 FCB

Discussion on the S-100 FCB

ROK wishes to recognize the following discussion points which emerged while validating the S-100 FCB and to discuss them at the TSM3:

- **Classification of S-100 FCB users**: According to user grades, the S-100 Registry classifies users into Registry Owner, Registry Manager, Register Owner, Register Manager, Domain Control Body, Executive Control Body, and Submitting Organization. Users of the S-100 FCB are expected to be Submitting Organization, but it may not be appropriate to grant all rights to them such as saving S-100 FCB DB. It is necessary to discuss granting rights according to different S-100 FCB users.

    1. **Right to save Feature Catalogue DB:**
       S-100 FCB users according to domains can work on the Feature Catalogue new or load the existing FC from the Feature Catalogue DB to edit it. Saving results as an XML file is not problematic, however, caution is required to saving them as FC DB which includes the S-100 Registry, thus discussion on restricting the saving right as FC DB is required.

    2. **Management methods of the Feature Catalogue according to domains**:
       Results from working on the Feature Catalogue can be saved as FC DB using the S-100 FCB, but the current FC DB structure has no distinctions of domains. Moreover, data models of the Feature Catalogue do not contain domain information. Due to these reasons, when new or updated Feature Catalogue is created using FCB and saved as FC DB, there is limitation to recognizing the Feature Catalogue using Product Names and Versions. Therefore, a discussion for the effective management of the Feature Catalogue according to domains will be needed.

Action Required of TSM3

The TSM3 is invited to:

a. note the progress reported in this paper.
b. discuss the points suggested in this paper and decide the solutions ahead.